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PATENT COOPERATION TREATY

PCT/DE2003/004004



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P18404WO		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/004004	International filing date (day/month/year) 05 December 2003 (05.12.2003)	Priority date (day/month/year) 20 December 2002 (20.12.2002)	
International Patent Classification (IPC) or national classification and IPC H02K 3/34			
Applicant SIEMENS AKTIENGESELLSCHAFT			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 14 May 2004 (14.05.2004)	Date of completion of this report 09 February 2005 (09.02.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE2003/004004

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1, 5, 6 _____, as originally filed
 pages _____, filed with the demand
 pages _____ 2, 3, 4, 4a _____, filed with the letter of _____ 29 September 2004 (29.09.2004)
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____ 1-13 _____, filed with the letter of _____ 29 September 2004 (29.09.2004)
- ☒ the drawings:
 pages _____ 1 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 4, 11

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 4, 11
are so unclear that no meaningful opinion could be formed (*specify*):

See the Supplemental Box.

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.1

**Non-establishment of opinion with regard to novelty,
inventive step and industrial applicability**

1. Claims 4 and 11: Dependent claims 4 and 11 claim that the spaces between the plurality of filaments are filled at least in part by the insulation (2) applied by extrusion. However, according to independent claims 1 and 9, the characterising feature of the invention is that a material that differs from the insulation (2) is inserted between the filaments as a filling (3). Claims 4 and 11 are therefore inconsistent with the independent claims to which they refer back and are therefore not clear (PCT Article 6).
2. Lines 29 to 34 on page 4 of the description therefore also lead to incompatibilities and are unclear.
3. Owing to these unclear items, no opinion is given here on claims 4 and 11.
4. Observation (concerns only the regional phase of the application before the EPO): For entry of the application into the regional phase before the EPO, it is suggested that claims 4 and 11 and lines 29 to 34 on page 4 of the description be deleted.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-3, 5-10, 12, 13	YES
	Claims		NO
Inventive step (IS)	Claims	1-3, 5-10, 12, 13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-3, 5-10, 12, 13	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: WO-A-0060721

D2: US-A-2570786

2. Independent claim 1:

2.1 D1 is considered to be the prior art closest to the subject matter of claim 1. Said document discloses (the references in parentheses and the reference signs relate to D1):

(see D1: page 8, line 27 to page 9, line 15; and fig. 2): a stranded conductor (32) having filaments (31), which conductor is surrounded by external extruded insulation (36). A plurality of insulated stranded conductors of this kind (32) form subconductors (30, 30A, 30B) for the winding of an electrical machine (see D1: page 13, lines 7-23; and fig. 4). The stranded conductors used are **pre-insulated** filaments or filaments subsequently **impregnated** with resin (see page 15, lines 21-26).

The subject matter of claim 1 therefore differs from

the known stranded conductor in that a flexible, extruded filling made from a material that differs from the external insulation is inserted between the filaments.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

- 2.2 The problem addressed by the present invention can therefore be considered that of improving the dissipation of heat between the stranded conductors and also providing equipotential bonding between the individual filaments of the stranded conductor.

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:

D2 discloses (the references in parentheses and the reference signs relate to D2): individual stranded conductors (10) provided with extruded insulation (15) and surrounded by additional external insulation (16) (see fig. 2, 3). In this case, however, the insulation material is the same. D2 does not therefore suggest to a person skilled in the art that the insulation (10) of the stranded conductors can be replaced by a filling material that differs from the external insulation in order to improve the dissipation of heat and provide equipotential bonding between the individual stranded conductors.

The subject matter of claim 1 is therefore inventive (PCT Article 33(3)).

3. Independent claim 9:

- 3.1 Claim 9 discloses a method for the production of electric conductors as defined in claim 1. Claim 9 is therefore likewise novel and inventive for the reasons stated in points 2.1 and 2.2 above (PCT Article 33(2) and (3)).

4. Dependent claims:

- 4.1 Claims 2, 3 and 5-8 are dependent on claim 1 and therefore likewise satisfy the PCT novelty and inventive step requirements.
- 4.2 Claims 10, 12 and 13 are dependent on claim 9 and therefore likewise satisfy the PCT novelty and inventive step requirements.

5. Industrial applicability:

Claims 1-3, 5-10, 12 and 13 are industrially applicable and satisfy PCT Article 33(4).